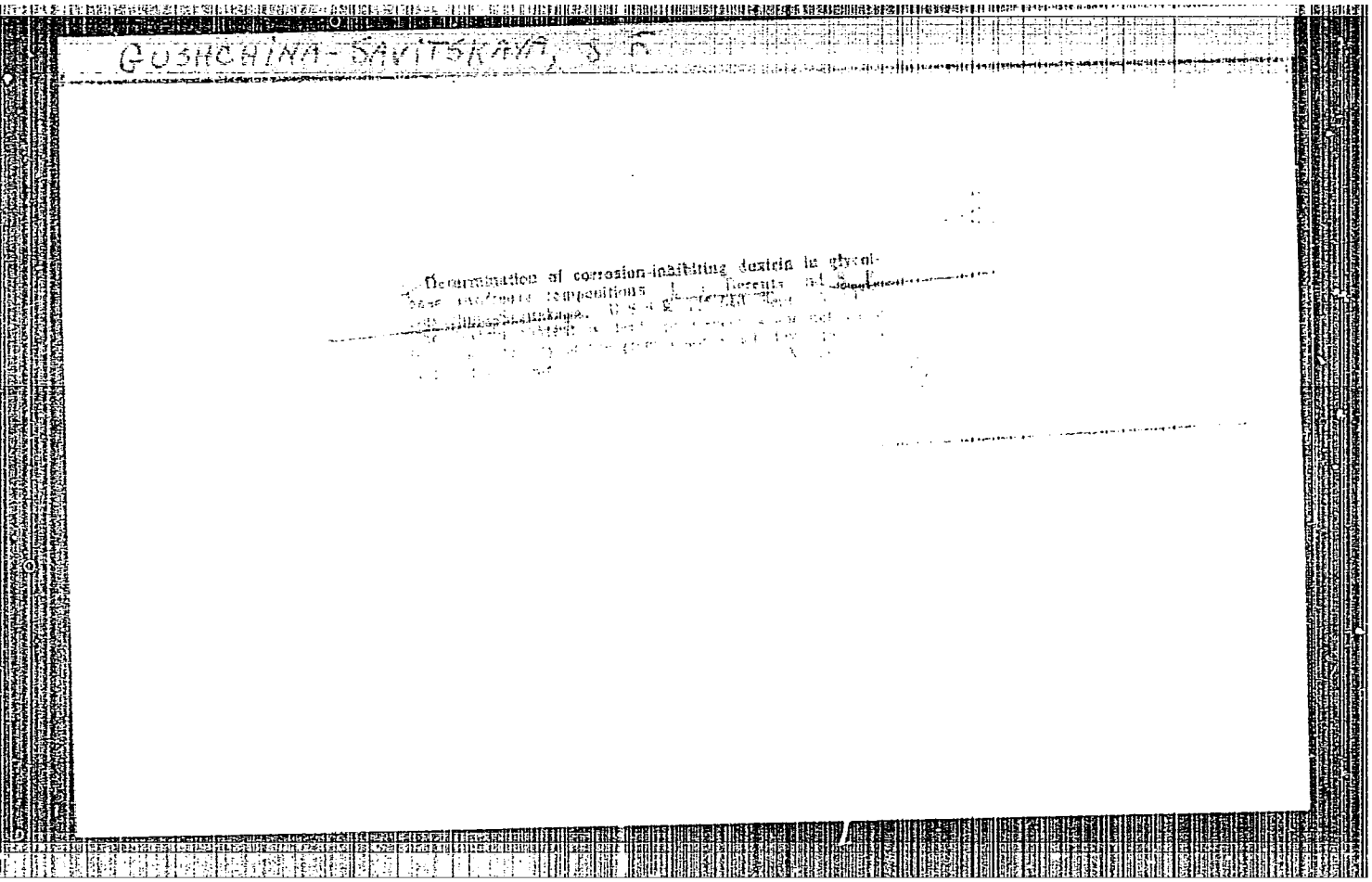

GUSHCHINSKIY, N.

New grain milling enterprises in the Mongolian People's Republic.
Muk.-elev.prom.27 no.12:4-6 D '61. (MIRA 15:2)

1. Proizvodstvenno-tekhnicheskoye upravleniye Gosudarstvennogo komiteta zagotovok Soveta Ministrov SSSR.
(Mongolia—Flour mills)

USHAKOV, G.P.; GUSHCHO, D.A.; LAZURKIN, Yu.S.; KAZAKOV, V.S.

[Effect of the phase state of polyethylene during irradiation on the character of the net formed] Vliianie fazovogo sostoianiia polietilena pri obluchenii na kharakter obrazuiushcheisia setki. In-t atomnoi energii AN SSSR, 1960. 19 p. (MIRA 17:1)
(Ethylene, Effect of radiation on)

GUSHCHO, S.V., inzh.

Unique bridge in Abidjan (Africa). Avt. dor. 24 no.3:29-31 Mr '61. (MIRA 14:5)
(Abidjan, Ivory Coast Republic--Bridges, Concrete)

S/190/60/002/010/011/026
B004/B054

AUTHORS: Ushakov, G. P., Gushcho, Yu. A., Lazurkin, Yu. S., and Kazakov, V. S.

TITLE: The Effect of the Phase Condition of Polyethylene During Irradiation Upon the Type of the Resulting Network

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 10, pp. 1512-1520

TEXT: The authors studied the dependence of radiation cross linking on the state of low-pressure polyethylene. Polyethylene samples were irradiated in thin-walled aluminum containers in the presence of helium in the reactor (dose 150 - 1625 Mrad). Crystalline samples were irradiated at 45 - 50°C, and amorphous, molten samples at 130-160°C. A table gives the change of the melting point caused by irradiation, the change of the vitrification temperature, and of the high-elasticity module E_∞. Fig. 1 shows E_∞ as a function of temperature, Fig. 2 thermomechanical curves of the samples irradiated, Fig. 3 E_∞ as a function of the irradiation dose, and Fig. 4 the nonmonotonous dependence of the melting point T_m

Card 1/2

on the dose. The authors found that the crystallization properties of irradiated polyethylene strongly depend on its phase condition during irradiation. Irradiation in a molten state led to a fast drop of T_m and a decrease of the crystallization degree. On irradiation in a crystalline state, the authors first observed a slight drop of T_m, then a constant value, and then a slight increase. The crystallization degree decreased more slowly than on irradiation of melts. These effects are interpreted as different types of network in the amorphous and crystalline states. In the amorphous state, the network fixes the disordered state of chains. In crystalline samples, however, the cross links fix the local order of polymer chains. This effect corresponds to the effect of increase of T_m in rubbers when their chains are oriented. There are 4 figures, 1 table, and 18 references: 7 Soviet, 7 US, and 3 British.

SUBMITTED: May 10, 1960

Card 2/2

S/844/62/000/000/090/129
D204/D307

AUTHORS: Ushakov, G. P., Lazurkin, Yu. S. and Gushcho, Yu. A.

TITLE: The nature of lattices formed when either crystalline or amorphous polyethylene is irradiated

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 526-530

TEXT: The present study, which is a continuation of earlier work (Vysokomolekulyarnyye soyedineniya, 2, 1512 (1960)), was carried out to determine the effect of lattices formed when amorphous or crystalline polyethylene (PE) is irradiated, on the physical and mechanical properties of the polymer after irradiation. Low- and high-pressure PE specimens were irradiated (up to 1625 Mrad), under He, in both amorphous (150 - 160°C) and crystalline (45 - 50°C) states. Crystalline specimens were then heated to 150°C and slowly cooled. Amorphous PE gave rise to 'a-lattices', whilst both a- and 'k-lattices' formed in crystalline irradiated samples. The modulus

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The nature of lattices ...

of elasticity (E) for k-lattices decreased with increasing dose of irradiation (increasing cross-linking), but this effect was considerably weaker than that observed for a-lattices; thus for network density corresponding to 12 - 13 C atoms between cross-linkages a-type PE was rubbery (E ~ 230 kg/cm^2), whilst k-type PE was still rigid and crystalline (E ~ 4800). The m.p. of a-PE decreased almost linearly with the growing proportion of cross-linkages whilst the corresponding effect for k-PE was less pronounced and discontinuous. The degree of crystallinity was simultaneously lowered, slowly for the k-, and rapidly for the a-lattice specimens. The a-lattices are formed by the cross-linking of convoluted polymeric chains. When crystalline PE is irradiated, the cross-linkages for either between locally ordered parallel chains of similar trans-configuration, to give the hitherto unknown k-lattices, or between disordered nonparallel chains (in the amorphous regions) to give the a-lattice. As in the case of amorphous irradiated specimens, the lowered crystallinity of k-PE is due to the decreased inter-chain distance on cross-linking. The m.p. is lowered when such lattices are formed, owing to (a) decreased crystallizability

and crystal size, and (b) decreased flexibility of the polymer chains. There are 3 figures.

ASSOCIATION: Institut atomnoy energii AN SSSR (Institute of Atomic Energy, AS USSR)

Card 3/3

L 17604-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) Pt-4/Pr-4/
Peb/Pu-4 AS(mp)-2/ASD(m)-3 GG/WLK/RM
AM4022018 BOOK EXPLOITATION S/

Ushakov, G. P.; Gushcho, Yu. A.; Lazurkin, Yu. S.; Kanakov, V. S.

Effect of the phase state of polyethylene during irradiation on the character of the lattices being formed (Vliyaniye fazovogo sostoyaniya polietilena pri obluchenii na kharakter obrazuyushcheysya setki) Moscow, 1960. 19 p. illus., biblio. 155 copies printed. (At head of title: Ordena Lenina Institut Atomnoy Energii im. I. V. Kurchatova AN SSSR)

TOPIC TAGS: Crystalline polymer, radiation chemistry, amorphous polymer, polyethylene

PURPOSE AND COVERAGE: Data concerning the influence of radiation "stitching" on the melting point of polyethylene crystals are contradictory: both a lowering with increasing dosage and practical constancy have been observed. This discrepancy may be due to the difference in temperatures at which irradiation has been performed. The lattice being formed may have a different character during irradiation in the crystalline state than during irradiation in the amorphous state, despite the approximately identical consistency, and may affect the melting point

Card 1/2

of the crystals differently. Clarification of this question is the purpose of the present study.

TABLE OF CONTENTS:

SUB CODE: GC, OC SUBMITTED: 00 NR REF SOV: 007

OTHER: 010

[redacted], A. A.

"Cyphocleonus tigrinus Panz, a Pest of the Insecticidal Camomiles, and the Bases for Its Control." Cand Agr Sci, Voronezh Agricultural Inst, Voronezh, 1954. (RZhBiol, No 7, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

YEFREMOV, Ivan Semenovich; GUSHCHO-MALKOV, Boris Petrovich; SHPOLYANSKIY, M.N., red.; OTOCHKVA, M.A., red.izd-va; LELYUKHIN, A.A., tekhn.red.

[New method of measuring the tension of contact network wires] Novyi metod izmereniia natiazheniia provodov kontaktnoi seti. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 38 p. (MIRA 13:12)

(Electric railroads--Wires and wiring)

YEFREMOV, I.S., doktor tekhn.nauk; GUSHCHO-MALKOV, B.P., inzh.

Nonstepping control system with a carbon controlling resistance.
Vest. elektroprom. 31 no.11:27-30 N '60. (MIRA 13:12)
(Street railways)

YEFREMOV, Ivan Semenovich, doktor tekhn. nauk, prof.; [illegible], Vadim Mikhaylovich, kand. tekhn. nauk; [illegible], Boris Petrovich, kand. tekhn. nauk, red.

[Design and calculation of the mechanical equipment of trolleybuses; textbook for term and diploma projects for students specializing in "City electric transportation"] Proektirovanie i raschet mekhanicheskogo oborudovaniia trolleibusov posobie dlia kursovogo i diplomnogo proektirovaniia studentam spetsial'nosti "Gorodskoi elektricheskii transport." Moskva, Energ. in-t, 1964. 238 p. (MIRA 18:1)

KOCHARYAN, E.G.; GUSHCHYAN, Z.V.

New data on the biology of tomato fertilization [in Armenian with summary in Russian]. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.3: 93-98 Mr '54. (MLRA 9:8)

(Tomatoes) (Fertilization of plants)

GUSHCHYAN, Z.V.

Effect of a pollen mixture on the vitality of the progeny in cabbage. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 8 no.2:49-51 F '55. (MLRA 9:8)

1. Institut genetiki i selektsii rasteniy AN Arm. SSR.
(Cabbage) (Hybridization, Vegetable)

GUSHCHYAN, Z.V.

Effect of different pollination methods on the formation of hereditary characters in the hybrid tomato generation. Izv. AN Arm. SSR. Biol. nauki 12 no.9:73-80 S '59. (MIRA 12:12)
(Tomato breeding)

GUSHEV, K. N.

BULGARIA/Chemical Technology - Chemical Products and Their Applications - Silicates. Glass. Ceramics. Binders. I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9014

Author : Gushev, K.N.

Inst :

Title : A New Formulation for the Manufacture of Earthenware Fired at 1200°.

Orig Pub : Leka Promishlenost, 1956, 5, No 2, 18-20.

Abstract : A new formulation is proposed for application in the production of floor slabs (in percent); Pleven white clay, 50; quartz sand, 24; sosium fedlspar, 22; dolomite, 4. The mass is sintered at 1200°. The slabs meet the requirements of the standard in all respects. The formula can also be applied in the production of acid-resistant articles.

Card 1/1

GUSHIN, I.S.

"On nervous-humoral mechanism of anaphylactoid shock in white rats."

Report submitted to the Intl. Symp. on Histamine, Warsaw, Poland 21-27 Sep 1962

GUSHKA, F.S., kand.tekhn.nauk

Increasing the uniformity of the roving in worsted spinning.
Nauch.-issl.trudy TSNIISHersti no.16:3-17 '61. (MIRA 16:11)

CA GUSHKIN, G G 8

Chemical composition, concentration, and pH of liquid inclusions in fluorite. G. G. Gushkin and P. L. Prikhid'ko. *Zaprski Vsesoyuz. Mineral. Obshchestva* (Mém. soc. russe. mineral.) **81**, 120-6 (1952). Dark-violet, bright-violet, and greenish colored zones of fluorite crystals are analyzed and show contamination by small particles of kaolinite, quartz, pyrite, or hematite are not taken into account) slight contents of Na_2O, MgO, and H_2O as foreign materials, derived from gaseous-liquid inclusions in the mineral. Spectrochem. examns. of the contents of these inclusions confirmed this assumption. There is a distinct decrease of the amts. of included material from the dark-violet cores, to the greenish or pinkish peripheral parts of the fluorite crystals. While the cores have crystd. in contact with schists and limestones intermixed, the peripheral parts have grown in a purely calcareous facies. Microchem. detns. of the contents of the inclusions gave, e.g., 0.012 g. of a solid residue from extd. solns., with Cl^- 0.007, HCO_3^- 0.001, Na^+ 0.003, and Mg^{++} 0.001 g (Ca^{++} and F^- from the dissolved crystal are not taken into account). The concn. of the solns. decreases from 11.0% (in the core zone) to 9.9% in the violet intermediate zone, and 5.7% in the greenish peripheral zone. While chlorides are enriched in the solns. of the core and intermediate stages, the greenish parts are enriched in carbonates (or bicarbonates) of Na and Ca. The pH values are for inclusions of the dark-violet core 7.0; for the violet intermediate zone 7.3; for the greenish zones 7.6. H_2O is driven out between 200 and 400°, with decrepitation and the principal wt. loss (0.16%), but from 400 to 800° no more changes of wt. are observed. W. Eitel

28156

S/122/61/000/003/009/013
D241/D305

1.1950

AUTHORS: Zemskov, G.V., Candidate of Technical Sciences, Docent, Smekh, Ye.V., Gushkin, L.K., and Khmelevskaya, M. Ye., Engineers

TITLE: Ultrasonic cleaning of steel from scales

PERIODICAL: Vestnik mashinostroyeniya, no. 3, 1961, 59-61

TEXT: The authors carried out research on the effect of ultrasonics on cleaning steel wire after drawing and patenting as well as on clock files and ordinary files after their hardening in oil. Pickling was carried out in a stainless steel bath. The ultrasonic vibrations were produced by a valve generator of 2.5 KW and employing a band of frequencies of 18 - 50 Kc. Nickel and "permendure" (K50F2) magnetostrictive vibrators mounted below and on the side of the bath produced the vibrations. No effect of frequency variation on the speed of etching was observed. The wire was treated in bundles, whereas the files were etched in bunches. Use was made of the following media: Water, a solution of sulphuric

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Ultrasonic cleaning of steel ...

and hydrochloric acids, their mixtures and solutions of culinary salt and alkalis. The relationship between the time of cleaning and the composition, concentration and temperature of solutions was established. The effect of the number of rows of wire in a bundle was also investigated. For comparison purposes experiments were carried out without the ultrasonics. Fig. 1 illustrates the relationship between the time of etching a patented wire in steel 70 and the concentration of acids. It can be seen from the graphs that the duration of etching is reduced by tens of times, and it reaches the minimum with a concentration that is lower than in normal etching. This allows a less frequent renewal of solutions. The effect of temperature is indicated graphically also. With lower concentrations of acids there is a greater effect of temperature on the speed of etching. The introduction of hydrochloric acid into the sulphuric acid solution increases the speed of pickling and produces a clearer metal surface. The most suitable solutions are the 10% sulphuric or hydrochloric acid with a content of 5% NaCl. The effect of screening due to the number of rows of wire in the bundles is also shown. If the article is preliminarily

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28356

Ultrasonic cleaning of steel ... S/122/61/000/003/009/013
D241/D305

treated during 5-10 minutes in a solution of sulphuric or hydrochloric acids and then cleaned by ultrasonics in water, the scales will be removed in 1 - 3 minutes which is a few times slower than in a solution of acid. Cleaning in water promotes rinsing of the etching solution. This can lead to a reduction of brittleness due to hydrogen. The mechanics of ultrasonic removal of scales is then described. There are 4 figures and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

Card 3/5

GUSHKO, Ya.M.

Meteorological and hydrological observations for hygienic purposes.
Meteor.i gidrol. no.8:37-38 Ag '60. (MIRA 13:8)
(Baikal region--Meteorology--Observations)
(Climatology, Medical)

K. 680V

S/208/62/002/003/007/011
I040/1219

AUTHOR: Gushkok, V. M. (Kiev)

TITLE: Self-organizing systems and the abstract theory of automata

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 3, 1962, 459–466

TEXT: The purpose is to show that it is possible to construct a sufficiently consistent theory of self-organizing systems. The degree of self-organization of a machine, defined as its capacity to improve its answers by improving the organization of its learning history, is evaluated quantitatively with the aid of the learning and examination entropies $H^Q(\mathrm{l})$ and $H^Q(\mathrm{ex})$ corresponding to a given partition Q, one for the probability distribution over sequences of learning problems and the other for the probability distribution over problems given to the machine when the learning stage is finished. For each class K of partitions which contains one and only one maximal element Q_0, there are defined two characteristics for the self-organizing capacity of machine A.

$$s(A,K) = -\int_K \Delta H^Q(\mathrm{ex})\, d\phi(Q) \quad \text{and} \quad z(A,K) = \int_K \frac{\Delta H^Q(\mathrm{ex})}{\Delta H^Q(\mathrm{l})}\, d\phi(Q) \quad \text{where} \quad \Delta H^Q = H^Q - H^{Q0}.$$

With the aid of quantities defining programming of the self-organizing process, there are also given quantitative characteristics for the self-teaching capacity of a machine.

SUBMITTED: January 24, 1962

Card 1/1

LEBEDEV, N.N.; GUS'KOV, K.A.

Reactions involving α -oxides. Part 3: Kinetics of secondary reactions in the interaction between ethylene oxide and acetic acid. Kin. i kat. 4 no.4:581-588 Jl-Ag '63. (MIRA 16:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.

GUSHKOVICH, S. N.

3(5) PHASE I BOOK EXPLOITATION SOV/2219

RSFSR. Glavnoye upravleniye geologii i okhrany nedr

Geologiya i neftegazonosnost' Vostochnoy Sibiri (Geology and Oil- and Gas-bearing Possibilities of Eastern Siberia) Moscow, Gostoptekhizdat, 1959. 486 p. 1,650 copies printed.

Additional Sponsoring Agency: Vostochno-Sibirskiy neftegeologicheskiy trest.

Ed.: V.G. Vasil'yev; Executive Ed.: Ye.G. Pershina; Tech. Ed.: I.G. Fedotova.

PURPOSE: The book is intended for geologists interested in the stratigraphy, lithology, tectonics, and the oil- and gas-bearing possibilities of the Eastern Siberian platform and Zabaykal'ye.

COVERAGE: This collection of articles contains materials on the stratigraphic classification and lithologic characteristics of sediments of the Cambrian system and of the so-called "ancient" beds developed along the northern slope of the Eastern Sayan Mountains and the western littoral of Lake Baykal. Extensive information on the petrography and paleontology of these deposits is presented. A number of articles deal with the tectonics of the southern part of the Siberian platform and its oil- and gas-bearing possibilities of the Baykal-type depressions. There are 40 tables, 74 figures, and 4 charts. There are 205 Soviet references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

MM/ad
8-20-59

VASIL'YEV, V.G.; GRACHEV, G.I.; NEVOLIN, N.V.; OZERSKAYA, M.L.; PODOBA, N.V. Prinimali uchastiye: ALEKSEYCHIK, S.N.; GUSHKOVICH, S.M.; DIKENSHTEYN, G.Kh.; DZVELAYA, M.F.; DRABKIN, I.Ye.; IVANOVA, M.N.; KAZARINOV, V.P.; KALININA, V.V.; KOZLENKO, S.P.; MEDVEDEV, V.Ya.; PUSTIL'NIKOV, M.R.; ROSTOVTSEV, N.N.; SKOBLIKOVA, G.I.; STEPANOV, P.P.; TITOV, V.A.; FOTIADI, E.E.; CHIRVINSKAYA, M.V.; SHMAROVA, V.P. GRATSIANOVA, O.P., red.; BEKMAN, Yu.K., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Manual for geophysicists in four volumes] Spravochnik geofizika v chetyrekh tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vol.1. [Stratigraphy, lithology, tectonics, and physical properties of rocks] Stratigrafiia, litologiia, tektonika i fizicheskie svoistva gornykh porod. Pod red. O.P. Gratsianovoi. 1960. 636 p. (MIRA 14:1)
(Petroleum geology) (Gas, Natural--Geology)

GUSHLO, L.N.

Methods of analyzing and planning stockbreeding and feed supply. Sbor.nauch.trud. Ivan.sel'khoz.inst. no.16:32-41 '58. (MIRA 13:11)

1. Kafedra organizatsii sotsialisticheskikh sel'skokhozyaystvennykh predpriyatiy Ivanovskogo sel'skokhozyaystvennogo instituta.
(Stock and stockbreeding) (Feeds)

GUSHLYA, Martem'yan Zakharovich; KRYUCHKOV, Vladimir Feofanovich; STROGANOV, L.P., inzhener, redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor

[Telephone operator's handbook] Posobie telefonistam. Moskva, Gos. transp. zhel-dor. izd-vo, 1957. 118 p. (MLRA 10:4)
(Telephone--Operators' manuals)
(Railroads--Communication systems)

MIKHAYLOV, L.L.; GUSHOV, A.I.; TITOV, V.G.

Combined transportation of oil and gas by pipelines. Neft. khoz. 39 no.7:43-47 Jl '61. (MIRA 14:6)
(Pipelines)

Bushkovskiy, L. I.

9(314) PHASE I BOOK EXPLOITATION SOV/2746

Akademiya nauk USSR. Fiziko-tekhnicheskiy institut

Elektrostaticheskiye generatory; sbornik statey (Electrostatic Generators; Collection of Articles) Moscow, Atomizdat, 1959. 255 p. 4,100 copies printed.

Ed. (Title page): A. K. Val'ter, Member, Academy of Sciences, USSR; Ed. (Inside book): Z. D. Andreyenko; Tech. Ed.: N. A. Vlasova.

PURPOSE: This collection of articles may be useful to scientists and engineers working with high-voltage electrostatic generators.

COVERAGE: The authors discuss the construction and operation of a number of electrostatic generators developed in the USSR and describe methods of generating negative hydrogen ions. They discuss the operation of accelerating tubes and present methods of stabilizing accelerator voltages. No personalities are mentioned. References appear at the end of some articles.

Koval', A. G., L. I. Krupnik, A. D. Timofeyev and Ya. M. Fogel'. Problem of Producing a Beam of Negative Hydrogen Ions by Overcharging Positive Ions in a Cathode Channel of a High-frequency Source 15
The authors discuss a negative hydrogen-ion source based on the production of a negative ion beam by overcharging positive ions in a gas flowing through a cathode channel of a high-frequency source. They also derive expressions for determining amount of negative hydrogen ions in that beam. There are 11 references: 6 Soviet, 4 English and 1 German.

Tsytko, A. A. Testing of Accelerating Tubes of a 4 Mev Electrostatic Accelerator Developed by FTI AN UkrSSR
The author briefly discusses the construction of a number of accelerating tubes and describes testing of these tubes in a 4 Mev electrostatic accelerator. He also discusses the results of testing and presents the configuration of the electric field in a tube with conical electrodes. There is 1 Soviet reference.

Fogel', Ya. M., R. P. Slabospitskiy and I. T. Gushovskiy. Generation of Negative Ions of Helium, Carbon, Oxygen and Chlorine When Passing Positive Ions Through a Supersonic Jet of Mercury Vapor. 32
The authors study the transformation of positive ions of helium, carbon, oxygen and chlorine into negative ions when former are passed through a supersonic jet of mercury vapor. They also consider the possibility of producing a source of heavy negative ions and present graphs showing variation of the transformation coefficient with temperature and ion energy. There are 7 references: 3 Soviet and 4 English.

Akshanov, B. S. Electrostatic Generator as an Injector for an Accelerator 46
The author discusses the use of electrostatic generators as injectors of high-energy particles for accelerators. He describes basic features of these generators and considers the operation of generator ion sources. He also discusses control and supply circuits of ion sources and briefly describes generators developed in the laboratory of FTI AN UkrSSR. There are no references.

Pivovar, L. I., and V. M. Tubayev. Study of Electric Strength of Some Compressed Gases and Gaseous Mixtures With the Aid of an Electrostatic Generator 56
The authors discuss a compact electrostatic generator developed in the laboratory of FTI AN UkrSSR and used in testing electric strength of compressed gases and gaseous mixtures such as carbon dioxide, nitrogen, hydrogen and mixtures of nitrogen and carbon dioxide, nitrogen and an electrically negative gas, sulfur hexafluoride (SF_6); carbon dioxide and sulfur hexafluoride. They describe the experimental setup, discuss the procedure used in testing and present experimental results. There are 12 references: 11 English and 1 Soviet.

Novikovskiy, D. S. Voltage Stabilization of a High-current Direct-acting Accelerator 73
The author discusses the operation of a voltage stabilization system for a high-current accelerator. The system was developed and tested in the laboratory of FTI AN UkrSSR and it may be used in accelerators using an electrostatic generator and a multiplier [illegible]. There are no references.

PETROVA-ALEKSANDROVA, N.; PENEV, TS.; GUSHTEROV, G.

Some anatomic and microbiological studies on the retting of flax (Linum usitatissimum L.) and hemp (Cannabis sativa L.).
Godishnik biol 56 no.1:67-81 '61-'62 [publ. '63].

GUSHTEROV, G.

"Bacterial Flora in the Root System (Free Nitrogen-Assimilable Bacteria) of the Kazanluk Rose." p. 49, Izvestiia, Sofiya, Vol. 4, 1953

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

BULGARIA/General Division - Problems of Teaching. A-7

Abs Jour : Ref Zhur - Biologiya, No 7, 10 April 1957, 25805

Author : Gushterov, Georgy K.
Inst :
Title : How we May Observe Certain Microoganisms

Orig Pub : Priroda i znaniye, 1954, 7, No 6, 10-14

Abst : No abstract.

Card 1/1

BUSHTEROV, Georgi K.

The effect of ammonium nitrate on the growth and morphology of Azotobacter. Georgi K. Gushterov. *Godishnik Sofiiskiya Univ. Biol.-Geol.-Geograf. Fak., Kniga 1-Biol.* 49, 21-42(1954/55)(Pub. 1956).—The test organisms were *A. agile* and *A. chroococcum*, and both technically (I) and chemically pure (II) NH_4NO_3 were used, with or without addn. of $Ca_3(PO_4)_2$. The addn. of I to soil in the ratio 1:20,000 or $1:10^4$ will reduce growth to about $^1/_2$ or $^1/_3$. Doses of $1:10^3$ will allow only a few colonies to grow, and doses of 1:400 will prevent growth. The tests with I can be run in the same manner as a penicillin assay. *Azotobacter* will grow only at a certain distance from the penicylinder, and the intensity of the growth can easily be ascertained by the coloration of same. If one does the expt. in soln., and adds 0.0005 g. I to 0.5 cc. medium, the organisms will grow as usual, yet the pigmentation of the colony will show changes, and addn. of I in doses of 0.000025 g. only will stimulate growth. If 0.33% II is added to the nutrient medium, *A. agile* will grow well but the cells will be morphologically different from the ones without the II; with 0.5% II it will not develop at all. *A. chroococcum* develops well at an addn. of 0.5% II; higher levels cause morphological changes, 1.4% II cuts down the growth appreciably, and growth stops at 1.5% II. If involute forms induced by II are seeded into media without II, the cells revert to normal shape, yet they can grow now in higher concn. of II, than the mother colony. Seeding of the involute forms in media with up to 0.5% II also results in a reversion to the normal form. Werner Jacobson

GUSHTEROV, G. K.

SCIENCE

Periodical: GODISHNIK Vol. 50, no. 1, 1955/56 (published 1957)

GUSHTEROV, G. Actinomycete antagonists, is lated from soil samples, preserved for a long time in dry-air condition. p. 317.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 2 February 1959, Unclass.

GUSHTEROV, Georgi K., kandidat na biologicheskite nauki, prepodavatel po mikrobiologiia (Sofiia)

The service of microbiology to industry. Prir i znanie 13 no.6:1-4 Je '60. (EEAI 10:1)

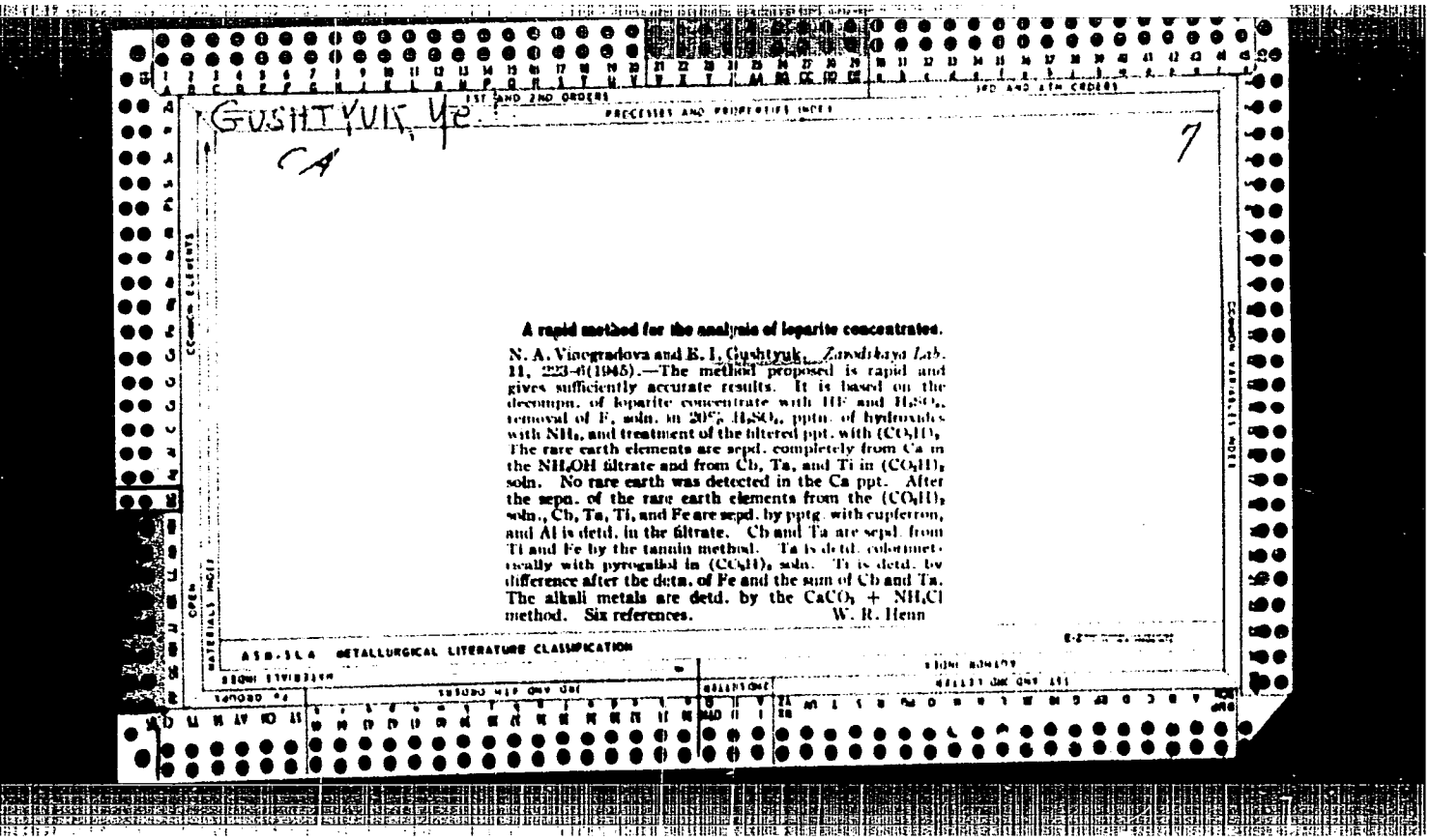
1. Sofiiski durzhaven universitet, Sofiia.
(Microbiology) (Industry)

GUSHTEROV, G.K.; PENEV, TS.

Studies of the flax microflora and rhizosphere. Godishnik biol 56 no.1:47-55 '61-'62 [publ. '63].

GUSHTEROV, G.; TISHINIVA-NANOVA, V.

Iron bacteria in some water basins in Bulgaria. Godishnik biol 57 no.1:1-7 '62-'63 [publ. '64].



GUSHTYUK, Ye.

CA

7

A rapid method for the analysis of loparite concentrates.

N. A. Vinogradova and B. I. Gushtyuk, *Zavodskaya Lab.* 11, 223-6(1945).—The method proposed is rapid and gives sufficiently accurate results. It is based on the decompn. of loparite concentrate with HF and H_2SO_4, removal of F, soln. in 20% H_2SO_4, pptn. of hydroxides with NH_4, and treatment of the filtered ppt. with $(CO_2H)_2$. The rare earth elements are sepd. completely from Ca in the NH_4OH filtrate and from Cb, Ta, and Ti in $(CO_2H)_2$ soln. No rare earth was detected in the Ca ppt. After the sepn. of the rare earth elements from the $(CO_2H)_2$ soln., Cb, Ta, Ti, and Fe are sepd. by pptg. with cupferron, and Al is detd. in the filtrate. Cb and Ta are sepd. from Ti and Fe by the tannin method. Ta is detd. colorimetrically with pyrogallol in $(CO_2H)_2$ soln. Ti is detd. by difference after the detn. of Fe and the sum of Cb and Ta. The alkali metals are detd. by the $CaCO_3$ + NH_4Cl method. Six references.

W. R. Henn

GUSHTEROV, G.K.; KOMINKOV, L.

Effect of hemp articles, preserved by β-naphthol, on various microorganisms. Godishnik biol 57 no.1:41-48 '62-'63 [publ. '64].

15(0) SOV/119-58-11-9/15

AUTHORS: Gushtyuk, Ye. I., Engineer, Zenov, S. P., Engineer

TITLE: The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions (Tekhnologiya izgotovleniya shkal i firmennykh tablichek k priboram i oborudovaniyu, prednaznachennym dlya raboty v tropicheskikh usloviyakh)

PERIODICAL: Priborostroyeniye, 1958, Nr 11, pp 25-26 (USSR)

ABSTRACT: The Tsentral'naya laboratoriya avtomatiki [TsLA] (Central Laboratory for Automation) developed a photochemical method with additional deep-etching for the purpose of producing relief-work name-plates etc. from brass. The basic surface is dyed black by the electro-chemical method. This method of production gave much better results than that recommended by the "[illegible] 623002-55" regulations. The technological production process according to the data supplied by the Central Laboratory, is the following: The brass plate (0,5 mm thickness) is ground on both sides and polished on one side only. After the removal of grease, the plate is nickel-plated. The nickel-plated part is once more degreased, washed with water, and dried, after which the photo-sensitive emulsion is supplied. The latter consists of three separate solutions

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The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions

which are poured together and mixed before application.
Individual Solution I.:
25 ml of 25 % aqueous ammonia, 1 l of water, 170 g of scraped glue of the type "Ekstra". After a period of from 12 to 14 hours the swelled glue is boiled up.
Individual Solution II.:
25 % ammonia and rectified alcohol (40 ml)
Individual Solution III.:
25 g bichromate of ammonium, 2.5 g chrome alum, 4 g chromic anaydride, 200 ml of water.
These three solutions, after having been poured together into a vessel, (durability 4 - 5 days) are applied in two layers at a temperature of 55 - 40°C in intervals of 20 - 25 minutes. Drying in the air in a vertical position takes 2 - 3 hours. Application of the letters, development, fixation, etc. is carried out in the same manner as with deep-etching. The following fixing agent is used: 50 g bichromate of ammonium, 20 g chrome alum, 5 g rectified alcohol, 1000 ml of water. Time needed for fixing: 5 - 6 minutes. That side of the plate on which there is no writing is now coated with varnish of the

The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions

type 9-32-[illegible] 3219-52. Drying takes 10 - 20 minutes at a temperature of from 50 - 60°C. The nickel coating (specific weight: 1,64) is electrolytically removed. Anode: plate, cathode: lead. Terminal voltage 6 - 8 V. Current density: 8 - 9 A/dm^2. A nickel layer having a thickness of 5 - 6 μ is removed within 1 - 2 minutes. The plate is washed in water and is placed into the following electrolyte for deep-etching: 180 - 200 g chromic anhydride, 1 - 1,5 g sulfuric acid, 1000 ml of water. Anode: plate. Cathode:nickel. Terminal voltage 6 - 8 V. Current density 1 - 1,5 A/dm^2. Time needed for etching: 20 - 60 minutes. After this operation the etched side of the plate is coated with varnish 9-32, the plate is cut to its required size, the necessary holes are drilled etc., and the protective coating is removed. If the basic surface is intended to remain yellow, the plate is coated with the varnish 9-32 [illegible] 473-56, which is suited for use in tropical climates. A black undercoating is produced electrolytically. Electrolyte: 160 - 180 g caustic potash, 3 - 4 g nitrate of sodium, 4 - 5 g KCl, and 1000 ml of water.

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The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions

Anode: plate. Cathode: steel. Current density 1 - 2 A/dm^2.
Temperature: 95 - 97°C. Time needed for working: 5 - 6 minutes.

ASSOCIATION: Tsentral'naya laboratoriya avtomatiki
(Central Laboratory for Automation)

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15(0)

AUTHORS: ~~Gushtyuk, Ye. I.~~ Engineer, Zenov, S. P. Engineer

SOV/119-58-11-1o/15

TITLE: The Technology of the Production of Scales and Name-Plates for Apparatus and Equipment Intended for Use Under Tropical Conditions.II(Tekhnologiya izgotovleniya shkal i firmennykh tablichek k priboram i oborudovaniyu,prednaznachennym dlya raboty v tropicheskikh usloviyakh)

PERIODICAL: Priborostroyeniye, 1958, Nr 11, pp 26-26 (USSR)

ABSTRACT: The Tsentral'naya laboratoriya avtomatiki (Central Laboratory for Automatics)developed the following technology for the production of large-sized metal scales and instrumental dials:The metal name-plates are cleaned,phosphatized,and provided with an undercoat of [illegible]-3. On to the front part treated in this manner,from 4 to 5 coatings of white enamel AC-81 are applied by means of a spray gun. Drying of each coating: 1 hour at 18-25°C and 1 hour at 11o°C. On to the reverse side of the plate enamel Nr 27o is applied.The metal signs are stuck on to the enamelled part and are coated with varnish 9-32F. For the photochemical production of the signs

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an aluminum foil of 0,1 mm thickness must be used. This foil is placed into a 10% solution of caustic soda, after which it is washed again in water and the photo-sensitive film is applied in the manner described in part J of this abstract. Anodizing takes place in an electrolyte of sulfuric acid at a terminal voltage of 12-15 V. The current density is 1-1,5 A/dm^2. Cathode-nickel, anode plate. The temperature of the bath is below 20°C; time needed for anodization: 20-30 minutes. After anodization the plate is coated with a water-soluble paint which is stable to light. The subcoating is removed by dipping into a solution of 100 g iron chloride, 15 g copper chloride, and 100 ml water. Hereafter, the plate is again washed in water, and the varnish is removed by means of the solvent Nr 646. In order to produce black figures and signs, a brass foil of 0,1 mm thickness is used, to which the photosensitive film is applied. Further treatment is similar to that described in part I of the abstract. Etching off the undercoating is carried out in an iron chloride solution (specific weight 1,42). The foil of varnish is then removed.

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The image obtained on the brass foil is stuck on to the scale.

ASSOCIATION: Tsentral'naya laboratoriya avtomatiki (Central Laboratory for Automatics)

Card 3/3

GUSIC, BRANIMIR

GUSIC, Branimir; KRAJINA, Zvonko

Otitis in children. Radovi Med. Fak. Vol. 1:3-23 1953.

1. Otorinolaringoloska klinika Medicinskog fakulteta u Zagrebu (predstojnik akademik B.Gusic)
(Otitis, in inf. & child)

GUSIC, Branimir, Akademik

King's operation in oxycephaly; data and results. Rad Jugosl. akad. znan., odjel med. 3:141-157 1953.

1. Iz Otorinolaringoloske klinike. Medicinskog fakulteta Svecilista u Zagrebu. Predstojnik: akademik prof. dr. B. Gusic.
(ACROCEPHALY, surg.
decompressive trepanation, technic (Ser))

GUSIC, Branimir, Akademik

Treatment of injuries of the ethmofrontal region. Rad Jugosl. akad. znan., odjel med. 3:159-173 1953.

1. Iz Otorinolaringoloske klinike. Medicinskog fakulteta Sveucilista u Zagrebu. Predstojnik: akademik prof. dr. B. Gusic.

(PARANASAL SINUSES, wds. & inj.
diag. & management (Ser))
(WOUNDS AND INJURIES,
paranasal sinuses, diag. & management (Ser))

GUSIC, BRANIMIR

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Effect of gastrostomy on general development of infant following corrosion of the esophagus. Radovi Med. fak. Vol.1:19-26 1954.

1. Iz Otorinolaringoloske klinike Medicinskog fakulteta u Zagrebu, predstojnik akademik prof. dr. Branimir Gusic; primljeno 22.X.1953.

(ESOPHAGUS, stenosis
*surg., esophagogastrostomy in child.)
(STOMACH, surg.
*esophagogastrostomy, in esophageal stenosis in child.)

GUSIC, B.

Present clinical and surgical aspects of cancer of hypopharynx and larynx. Voj. san. pregl., Beogr. 11 no.11-12:460-468 Nov-Dec 54.

(PHARYNX, neoplasms
hypopharyngeal, surg.)
(LARYNX, surg.)

GUSIC, Branimir, Prof.dr.

Acute corrosive burns of the esophagus. Med.glasn. 9 no.2-3: 51-55 Feb-Mar '55.

1. Otorinolaringoloska klinika Medicinskog fakulteta Sveucilista u Zagrebu (predstojnik prof. dr B. Gusic)
(ESOPHAGUS, stenosis, caustic)

GUSIC, Branimir, Dr.

Our present management of acute corrosion of esophagus. Lijec. vjes. 77 no.3-4:168-177 Mar-Apr '55.

1. Iz Otorinolaringoloske klinike Medicinskog fakulteta u Zagrebu.
(ESOPHAGUS, wds. & inj.
burns, caustic, management (Ser))

GUSIC, Branimir, Prof. dr.; FEMENIC, Branko, doc., dr.

Personal experience in tympanoplasty. Voj. san. pregl., Beogr. 13 no.3-4:134-137 Mar-Apr 56.

1. Otorinolaringoloska klinika Medicinskog fakulteta Sveucilista u Zagrebu.
(EAR, MIDDLE, surg.
tympanoplasty (Ser))

GUSIC,Branimir; FEMENIC,Branko; KRAJINA,Zvonimir

Recent views on patho-physiology of the respiratory mucosa.
Radovi med. fak.,Zagrebu 7 no.1:17-33 '59.
(RESPIRATORY SYSTEM dis.)

GUSIC, Branimir

Our Views on the problem of acute esophageal burns. Otolar. polska 14 no.4:411-23 '60.

1. Czlonek Jugoslowianskiej Akademii Nauk w Zagrzebiu.
(ESOPHAGEAL STENOSIS in inf & child)

GUSIC, Branimir, prof., dr; FEMENIC, Branko, prof., dr

Rehabilitation in conduction deafness by surgical means. Med. glas. 15 no.12/12a:426-427 D '61.

1.Otorinolaringoloska klinika Medicinskog fakulteta u Zagrebu (Predstojnik: prof. dr B. Gusic)

(DEAFNESS surg)

GUSIC, B.; SOKOTIC, [illegible].

Working capacity of patients following mutilating neck surgery for cancer and the role of the community for their future. Arh. hig. rada 14 no.2:111-118 '63.

1. Otorinolaringoloska klinika Medicinskog fakulteta Sveucilista Zagreb.

GUSIC, Branimir, Akademik prof. dr. (Zagreb)

Surgical limitations in the surgical treatment of thyroid neoplasms. Med.Glas.17 no.11/12:431-433 N-D '63.

GUSIC, Branimir, akademik

Role of the ethnographic factor on the health of the population.
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Medicine. Bul sc Youg 9 no.4/5:116-117 Ag-O '64.

PICOS, Constantine A.; GUSIC, Jules Vladimir

Contribution to the study of the blood coagulation of carp. Acta hydrobiol 4 no.3/4:413-420 '62.

1. Faculte de Science Naturelles, Universite "C.I.Parhon", Bucarest.

GUSIC, Vladimir Iuliu (Bucuresti)

"Migrations of animals" by Constantin Bogoescu. Reviewed by Vladimir Iuliu Gusic. Natrua Biologie 14 no.2:90-91 Mr-Ap '62.

GUSIC, Vl.I. (Bucuresti)

"Problems of blood coagulation and thrombogenesis" by Boris Alexandrowei Kurdiasov [Kudryashov, B.A.]. Reviewed by Vl. I. Gusic. Natura Biologie 16 no.4:83-84 Jl-Ag '62.

GUSIC, Vl. I. (Bucuresti)

Discovery of some new antibiotics. Natura Biologie 14 no.3:86 My-Je '62.

GUSIC, Vl. I. (Bucuresti)

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GUSIKA P.L.

PHASE I BOOK EXPLOITATION SOV/5410

...konferentsiya po mirnomu ispol'zovaniyu atomnoy ...rgii. Tashkent, 1959.

Trudy (Proceedings of the Tashkent Conference on the Peaceful Uses of Atomic Energy) v. 2. Tashkent, Izd-vo AN UzSSR, 1960. 4[illegible] p. Errata slip inserted. 1,500 copies printed.

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Transactions of the Tashkent (Cont.) SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babakhanova.

PURPOSE : The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

COVERAGE: This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Peaceful Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

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instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION IN ENGINEERING AND GEOLOGY

S/707/60/003/000/009/013
B125/B102

AUTHORS: Akkerman, A. F., Gusika, P. L., Kaipov, D. K.

TITLE: γ-radiation applied to the detection of heavy element doping in a medium with small atomic number

SOURCE: : Akademiya nauk Kazakhskoy SSR. Institut yadernoy fiziki. Trudy. v. 3, 1960. Vzaimodeystviye vysokoenergichnykh chastits s atomnymi yadrami, 124-130

TEXT: Possibilities are discussed of detecting heavy elements in ore-bearing rocks by a variant of the Monte Carlo method developed by the authors (Trudy Instituta yadernoy fiziki Akademii nauk Kazakhskoy SSR) for calculating the transmission of radiation through matter. 200 125-Mev γ-quanta ($E \approx 2.447\ m_0c^2$) incident perpendicularly on two types of specimen, 10 cm thick, composed of a homogeneous aluminum lead mixture, one with a lead content of 5 and the other with one of 10 percent in weight, were studied by the authors. In addition, a "selection" of the partner (i.e. of the aluminum or the lead atom) was introduced into the calculating scheme. The probability for interaction with the aluminum

γ-radiation applied to the...

atoms in the mixture is given by $P = \sigma_{Al} \cdot N_{Al} / (\sigma_{Al} \cdot N_{Al} + \sigma_{Pb} \cdot N_{Pb})$, where σ_{Al} and σ_{Pb} are the total cross sections of the interactions with the aluminum and lead atoms; N_{Al} and N_{Pb} are the numbers of Al and Pb atoms per cm^3 of the mixture. The results of the calculations are shown with others in Fig. 3 and Fig. 5. Photoabsorption occurs practically only on lead. With increasing lead concentration, the maxima of photoabsorption are shifted toward higher energies. At the same time the whole energy distribution changes. The share of the heavy element in the mixture becomes noticeable in certain sections of the spectrum of both forward and backscattered radiation and can be determined experimentally. This confirms the ideas of selective core sampling by γ-rays. In the range of relatively high concentrations the method of selective core sampling is of low efficiency owing to the small difference of the spectra of scattered radiation at a lead content of 5 % and 10 %. With increasing concentration of the heavy element doping, selective core sampling passes to impervious core sampling. Selective core sampling by γ-rays can be employed if the lead doping is less than 5 %, impervious core sampling if it is more than 5 %. The

percentage of dopings in ore-bearing rocks cannot be evaluated precisely since the data hitherto available are insufficient. The ore content could, however, be estimated from the ratio of intensities in a definite section of the spectrum and from the shift of the maximum of photoabsorption on the energy scale. The doping percentage can be evaluated by selective core sampling with the use of a luminescence spectrometer. Ye. Akkoshkarov and F. A. Tulinova are thanked for their assistance in carrying out the calculations. There are 7 figures, 1 table, and 5 references: 4 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: C. C. Horton Rep. A.E.R. ERS/L3, 1953.

Legend to Fig. 3: Energy spectra of photoabsorbed γ-quanta: 1 - Al + 5% Pb; 2 - Al + 10 % Pb.

Legend to Fig. 5: Spectra of forward scattered γ-quanta for a mixture: 1 - Al + 5 % Pb; 2 - Al + 10 % Pb.

S/057/61/031/007/008/021
B111/B206

3.2600

AUTHORS: Vulis, L. A. and Gusika, P. L.

TITLE: The "reversal" of effects in magnetohydrodynamics

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 806-818

TEXT: The application of the "law of the reversal of effects" on steady quasi-unidimensional flows of a conductive gas which is affected by hydro- and electrodynamic factors, is discussed. This law was formulated by L. A. Vulis (Ref. 1: DAN SSSR, 54, 669, 1946; 56, 799, 1947) in the general for the unidimensional steady motion of a gas, and has the form

$$(M^2 - 1)\frac{d\ln z}{dx} = \sum_i \alpha_i^2 \frac{dw_i}{dx}\frac{d\Omega}{dx} \qquad (1),$$

where M is the Mach number, z the symbol for the rate of flow u, the mach number or a state parameter of the gas, x the direction of u, dw_i/dx the "effect", and $d\Omega/dx$ the sum of effects. By the "effects" dw_i/dx the authors mean cross sectional changes of the channel, changes of the outflow rate, or supply and removal of energy in the form of work, heat, and friction. Of special interest in magneto-

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The "reversal" of effects in ...

hydrodynamics is the effect of the electromagnetic field on the flow of the conductive gas. This effect is studied in two aspects. 1) The passage through the critical rate of propagation of disturbances in any dense moving medium is investigated by means of (1). 2) The dependence of the electric volume force (and dissipation) on the rate of flow is investigated. The passage through sound velocity and the application of the "Law of the reversal of effects" in magnetohydrodynamics was explained by G. S. Golitsyn and K. P. Stanyukovich (ZhETF, 33, 6 (12), 1417, 1957) for finite, but large electric conductivity, i.e., great Re_m. The same study was conducted by E. L. Reslera and W. R. Sears (ZAMP, 96, no. 5/6, 509, 1958; J. Aeron. Sci., 25, no. 4, 235, 1958) for small Re_m values. From the magnetohydrodynamic fundamental equations, the authors derive equation

$$(M^2-1)\frac{d\ln u}{dx}=\frac{d\ln F}{dx}+\frac{1}{a^2}\frac{dp}{dx}+\frac{1}{\rho a^2}[j\mu H]_x- \qquad (8)$$
$$-\frac{1}{a^2}\left(\frac{d\mathcal{P}}{dx}+\frac{d\mathcal{P}_{\text{тр.}}}{dx}\right)+\frac{1}{\rho c_p}\left(\frac{\partial p}{\partial T}\right)_\rho\left(\frac{dQ}{dx}+\frac{dQ_{\text{тр.}}}{dx}+\frac{j^2}{\rho u\sigma}\right).$$

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The "reversal" of effects in ...

for the reversal of effects, where F is the channel cross section, φ the gravitational potential, L_{TP} and Q_{TP} the frictional energy and -heat, L the mechanical energy, Q the heat from other heat sources. In the next two paragraphs, first the electromagnetic effect and then the passage through the hydrodynamic sound velocity are isolated and studied in detail. For the general case of the passage through the total magnetohydrodynamic sound velocity,

$$(\tilde{M}^2-1)\frac{d\ln u}{dx}=\frac{1}{1+\xi A^2}\left[\frac{d\ln F}{dx}-\frac{\gamma-1}{a^2}\left(\frac{dQ}{dx}+\frac{j^2}{\rho u\sigma}\right)\right]. \qquad (18)$$

holds for the "law of the reversal of effects", where $\tilde{M}^2 = M^2/(1 + \xi A^2)$, $\tilde{M}^2 = 1. + A^2$, and for ξ holds $\xi = 1/(1 - H''/Re_m \cdot H')$ (20), $0 \leqslant \xi \leqslant 1$. The primed quantities in (20) signify the derivation according to $\bar{x} = x/l$. A special case of this problem was dealt with by L. A. Vulis and K. P. Stanyukovich (Ref. 8: V sb. "Issledovaniye protsessov perenosa. Voprosy teorii otnositel'nosti" - ("Investigation of transfer processes. Problems of relativity theory"), vyp. 2. Trudy KazGU, Uchpedgiz, Alma-Ata,

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1960) and K. P. Stanyukovich (Ref. 9: Neustanovivshiyesya dvizheniye sploshnoy sredy, GITTL, M., 1955)during the study of the gas loss of stars. The studies conducted by the authors showed that the "law of the reversal of effects" on quasi-unidimensional steady flows of a conductive gas can be applied for electromagnetic effects. In the general case, the reversal of the effects leads to a generalization of the mach number $M = u/\tilde{a}$, where $\tilde{a}$ is the total sound velocity in magnetohydrodynamics; for $Re_m \gg 1$, $\tilde{a} \cong \sqrt{a^2 + V_A^2}$ holds and for $Re_m \ll 1$, $\tilde{a} \cong a$, so that in general $\tilde{a}^2$ becomes $\sqrt{a^2 + \xi V_A^2}$, where ξ is determined from (20). N. Ye. Zhukovskiy is mentioned. There are 3 figures, 2 tables, and 13 references: 10 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im. S. M. Kirova, Alma Ata (Kazakh State University im. S. M. Kirov, Alma-Ata)

SUBMITTED: July 25, 1960

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26.2311

S/057/61/031/007/009/021
B104/B206

AUTHORS: Vulis, L. A. and Gusika, P. L.

TITLE: Hydro-gas-analogy in magnetohydrodynamics

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 819-823

TEXT: N. Ye. Zhukovskiy (Trudy TsAGI, no. 1, 1925) showed that the motion of an incompressible fluid in a closed channel is in many respects analogous to the isentropic motion of a compressible gas. It can be easily shown that this analogy is also kept up for the motion of conductive media during the effect of electromagnetic forces. The equations of motion for a plane isentropic flow of a compressible conductive gas, and those for a quasi-plane motion of a conductive liquid in closed channels are investigated. In the first part, the system

$$\frac{\partial \rho}{\partial t} + \frac{\partial (\rho u)}{\partial x} + \frac{\partial (\rho v)}{\partial y} = 0, \qquad (1)$$

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$$\left.\begin{aligned}\rho\frac{\partial u}{\partial t}+\rho u\frac{\partial u}{\partial x}+\rho v\frac{\partial u}{\partial y}&=-\frac{\partial p}{\partial x}+\left[\mathrm{j}\mu\mathrm{H}\right]_x+f_x,\\ \rho\frac{\partial v}{\partial t}+\rho u\frac{\partial v}{\partial x}+\rho v\frac{\partial v}{\partial y}&=-\frac{\partial p}{\partial y}+\left[\mathrm{j}\mu\mathrm{H}\right]_y+f_y,\end{aligned}\right\} \quad (2)$$

$$c_pT+\frac{V^2}{2}=c_pT_0. \quad (3)$$

is written down for the gas flow and in the second part, the system

$$\frac{\partial h}{\partial t}+\frac{\partial(hu)}{\partial x}+\frac{\partial(hv)}{\partial y}=0, \quad (7)$$

$$\left.\begin{aligned}h\frac{\partial u}{\partial t}+hu\frac{\partial u}{\partial x}+hv\frac{\partial u}{\partial y}&=-gh\frac{\partial h}{\partial x}+[\mathrm{j}\mu\mathrm{H}]_x+f_x,\\ h\frac{\partial v}{\partial t}+hu\frac{\partial v}{\partial x}+hv\frac{\partial v}{\partial y}&=-gh\frac{\partial h}{\partial y}+[\mathrm{j}\mu\mathrm{H}]_y+f_y,\end{aligned}\right\} \quad (8)$$

$$h + \frac{V^2}{2g} = h_0. \qquad (9)$$

for a fluid flow with free surface. In both cases $[\vec{j}\vec{\mu H}]$ was considered, and from a comparison of the two systems it may be seen that they are analogous for $\gamma = 2$. The following analogues are compared: Mach number $M = V/a$ - Froude number $Fr = V/c$; density ratio ϱ/ϱ_0 - height ratio h/h_0; pressure ratio p/p_0 - ratio of the squares of the heights h^2/h_0^2; temperature ratio T/T_0 - height ratio $h:h_0$; Alfvèn number $A = V_A/a$ - analogue of the Alfvèn number $\overline{A} = \overline{V}_A/c$. In the last ratio, $V_A = \sqrt{\mu H/\varrho}$ denotes the velocity of the magnetoacoustic oscillations in a medium with infinite conductivity. These ratios form the basis for simulating flows of a conductive gas by means of the flows of a conductive liquid in a trough on application of electric and magnetic fields. For both cases the known relations $\vec{J} = \text{curl } \vec{H}$ and $\vec{j} = \sigma(\vec{E} + [\vec{V}\mu\vec{H}])$ hold for the flow density vector and $\partial\vec{H}/\partial t = \text{curl}[\vec{V}\vec{H}] + \nu_m \nabla^2\vec{H}$ for the correlation between magnetic field strength

and flow velocity. The completion of the initial equations by these two differential equations determines the conditions for electromagnetic simulating. The main criterium for both flows is the magnetic Reynolds number $Re_m = Vl/\nu_m$, where $\nu_m = 1/\mu\sigma$ is the so-called magnetic viscosity and σ the conductivity. As is shown, the analogy investigated here permits the variation of Re_m in a very wide range. For $Re_m \ll 1$, aerodynamic problems may be investigated, for $Re_m \longrightarrow \infty$, problems of astrophysics. The authors investigate the fluid flow in an open channel with slowly changing width. Then, the continuity equation and the equation of motion are:

$$\frac{d\ln h}{dx} + \frac{d\ln u}{dx} + \frac{d\ln b}{dx} = 0, \qquad (14)$$

$$\rho hu\frac{du}{dx} = -g\rho h\frac{dh}{dx} + [j\mu H]_x, \qquad (15)$$

$b = b(x)$ being the channel width. By means of the Froude number $Fr = v/\sqrt{gh}$,

$$(Fr^2 - 1)\frac{d\ln v}{dx} = \frac{d\ln b}{dx} - \frac{1}{Hc^2}[j\mu H]_x \qquad (16)$$

is obtained for the flow velocity and

$$(Fr^2 - 1)\frac{d\ln Fr^2}{dx} = 2\cdot\left(1 + \frac{Fr^2}{2}\right)\frac{d\ln b}{dx} - \frac{3}{Hc^2}[j\mu H]_x \qquad (17)$$

for the Froude number itself. These equations are analogous to those in ordinary gas dynamics and in magnetogasdynamics. They are discussed for $Re_m \ll 1$ and $Re_m \gg 1$. There are 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet im. S. M. Kirova Alma-Ata (Kazakh State University imeni S. M. Kirov, Alma-Ata)

L 08527-67 EWP(m)/EWT(1) IJP(c) AT

ACC NR: AP6034579 SOURCE CODE: UR/0382/66/000/003/0045/0054

AUTHOR: Gusika, P. L.; Sukhov, G. S.

ORG: none

TITLE: Effect of ionization on the structure of a shock wave in a magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 3, 1966, 45-54

TOPIC TAGS: magnetogasdynamics, ionizing shock wave, thermal ionization, ionized plasma, shock wave structure, viscous flow, inviscid flow, dissipation

ABSTRACT: The structure of a one-dimensional magnetogasdynamic shock wave in a monatomic gas within a transverse magnetic field is analyzed, with thermal ionization taken into account. The analysis is based on the solution of a system of equations describing a one-dimensional magnetogasdynamic shock wave in a partially ionized perfect gas in a coordinate system moving with the shock front and to which the Saha equation is added. It is assumed that the time required to establish thermodynamic equilibrium is much smaller than the characteristic time of the problem and that temperatures and velocities of the oriented motions of electrons, ions, and neutral atoms across the shock wave front are equal. Thus, the analysis of the plasma motion is presented in a single-fluid approximation with no account taken of the Hall effect and ion slippage. The peculiarities of the shock-wave structure in electrically and heat conducting inviscid and viscous gases were considered with the

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L 08527-67

ACC NR: AP6034579

the aid of the "law of inversion of effects" established by Vulis (Termodinamika gazovych potokov, M. Gosenergoisdat, 1950). The values of the degree of ionization and velocity behind the shock wave were obtained from a graphical solution of the corresponding equations. The results of numerical calculations of flow parameters behind the shock front in the ranges of gasdynamic free flow Mach number M_{*1} up to 25, nondimensional temperatures of a single ionization $\theta = 9.2$ to 18.2, and of the magnetic pressure parameter $\pi = 0.83$ to 83.3 are given in graphs and compared with those obtained without any ionization process. It is shown that considering ionization processes in magnetogasdynamic flows with shock waves leads not only to quantitative differences, but also to certain new qualitative effects such as variation of the critical velocity, anomalous behavior of the $\sigma(M_{*1})$ curve, etc. The author thanks Professor L. A. Vulis for his interest in the work and valuable advice. Orig. art. has: 4 figures and 18 formulas.

SUB CODE: 20/ SUBM DATE: 11Mar66/ ORIG REF: 009/ OTH REF: 004/
ATD PRESS: 5103

Card 2/2 LS

ACC NR: AP6034907 SOURCE CODE: UR/0382/66/000/002/0061/0072

AUTHOR: Vulis, L. A.; Gusika, P. L.; Kusainov, M. K.; Shmelev, Yu. K.; Yaglenko, V. T.

ORG: none

TITLE: Mercury flow in a trough in a transverse magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1966, 61-72

TOPIC TAGS: transverse magnetic field, mercury, magnetogasdynamics, magnetohydrodynamics, mercury flow, free surface flow

ABSTRACT: The article presents some results of systematic observations of a stationary flow of mercury in a horizontal trough, with insulated walls and electrodes in the presence of a transverse magnetic field. This method was found to be valuable in the study of magnetohydrodynamics and magnetogasdynamic phenomena. Qualitative characteristics were obtained on the structure of the hydraulic jump in the magnetic field and the influence of the latter on the intensity and location of the hydraulic jump in the range of values studied for the determin-

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ing parameters. Experimental data for continuous subcritical and theoretical flows obtained in a one-dimensional approximation were compared, and qualitative characteristics obtained. Results of tests confirmed the qualitative deductions from the analysis of equations of reversal effects and the possibility of using an approximate computation based on a one-dimensional diagram. With a certain correlation of parameters, a practically smooth virtually jumpless transition from the supercritical to the subcritical flow was observed. Orig. art. has: 13 figures, 13 formulas. [GC]

SUB CODE: 11, 20, 09/ SUBM DATE: 31Jan66/ ORIG REF: 006/OTH REF: 003/

Card 2/2

GUSILEVSKII, L. I.

Author: Gusilevskii, L. I.

Title: Constructor of aircraft. (Stroitel' samoletov.)

City: Moscow

Date: 1946

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 4, No. 1, p. 25

AKKERMAN, A.F.; GUSIKA, P.L.; KAIPOV, D.K.

Possibility of detecting a heavy-element impurity in a medium of small atomic number with the aid of γ radiation. Trudy Inst. iad. fiz. AN Kazakh. SSR 3:124-130 '60. (MIRA 13:10)
(Gamma rays)

GRIGORASH, M.; GUSINA, G., starshiy nauchnyy sotrudnik

New type of semiprocessed products: powdered vegetables. Obshchestv. pit. no.9:36 S '63. (MIRA 16:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut konservnoy promyshlennosti, Odessa.

AID P - 4106

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 17/24

Authors : Kazak, N. A., V. Z. Bazyev, and G. A. Gusin, Engs.

Title : The need to expand the field of application of synchronous motors. (Discussion of the article by M. V. Greysukh, A. M. Rozental', and N. N. Stefanovich, this journal, No. 9, 1954).

Periodical : Elektrichestvo, 11, 80-82, N 1955

Abstract : The authors agree with the basic assumptions of the article by Greysukh and others, but have some objections as to the recommendations presented, and give their own recommendations. Three diagrams, 3 Soviet references (1954).

Institution : None

Submitted : No date

GRIGORASH, M.P.; GUSINA, G.B.

Technology of manufacturing powdered vegetables in spray-dryers. Kons. i ov.prom. 17 no.4:18-21 Ap '62. (MIRA 15:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut konservnoy promyshlennosti.

(Ukraine--Vegetables, Dried)

PA 67/49T82

GUSININ, I. A. Prof.

USSR/Medicine - Lymphangitis May 49
Epizootic Diseases

"Treatment of Epizootic Lymphangitis in Horses With Ranunculus Compounds," Prof I. A. Gusinin, Pharmacol Lab, All-Union Inst of Experimental Vet Med, 4 pp

"Vet" No 5

Methods and apparatus for preparing Ranunculus scleratus and R. acris are described. These preparations are effective local means of treating lymphangitis and are inexpensive and simply prepared. Proper feeding and care of the horse are essential. Exact concentration and dosage still require study.

67/49T82

GUSINSKAYA, B.S.

Effectiveness of multistage treatment of rheumatic fever in children. Pediatriia no.2:39-44 F '57. (MIRA 10:10)

1. Iz detskogo ob"yedineniya (nachal'nik - kandidat meditsinskikh nauk F.I.Ratnikov) Sverdlovskoy zheleznodorozhnoy bol'nitsy.
(RHEUMATIC FEVER)

GUSINSKAYA, M.Sh.

Operation of the separation section of the Ertil' Factory.
Sakh. prom. 33 no.5:49-50 My '59. (MIRA 12:7)

1.Ertil'skiy sakharnyy zavod.
(Ertil'--Sugar manufacture)

SIKIRYAVYY, A.G.; CHUMICHEV, A.S.; NIKOLAYEV, V.A.; TARANOVA, L.D.; GUSINSKAYA, M.Sh.

Work of the separation plant of the Ertil' Sugar Factory. Sakh. prom. no.4:21-23 Ap '60. (MIRA 13:8)

1. Direktor Ertil'skogo sakharnogo zavoda (for Sikiryavyy). 2. Glavnyy inzhener Ertil'skogo sakharnogo zavoda (for Chumichev). 3. Nachal'nik planovogo otdela Ertil'skogo sakharnogo zavoda (for Taranova). 4. Pomoshchnik starshego khimika po separatsii Ertil'skogo sakharnogo zavoda (for Gusinskaya).
(Ertil'--Sugar manufacture)